CHAPTER 3

PROJECT AND RISK MANAGEMENT

LOUIS IRWIN

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I. INTRODUCTION AND SUMMARY

Testimony in this chapter addresses three topics: 1) the level of the risk allowance, 2) project management, and 3) risk management. DRA counter proposals are confined to the area of risk allowance. SDG&E has not finalized a project and risk management contract. Therefore, DRA makes no recommendations in these areas, but does discuss some target areas of focus for finalization of the project and risk management contract.

A. Recommendations:

- That shareholders should be responsible for 10% of the risk allowance expenditures when costs rise beyond 107.4% of the AMI approved project total (this is the same as the PG&E risk allowance level).
- That ratepayers should be responsible for the remaining 90% of the contingency allowance until the 114.7% of capital costs expenditure level is reached. This `14.7% contingency level is the one proposed by SDG&E.
- For the project as it is currently proposed, the above recommendation will result in approximately $23.5 million dollars being split 90 / 10 and shareholders being held responsible for approximately $2.35 million.
- That the cost overrun 90 / 10 sharing band be expanded another approximate $26.5 million until such point as it reaches exactly $50 million and shareholder responsibility reaches exactly $5 million (for whatever the final Commission approved project total is).

- That expenditures beyond SDG&E's $50 million dollar risk sharing band be subject to a reasonableness review. Note that the proposed $50 million dollar risk sharing band is half the $100 million allotted to PG&E in its AMI proceeding and that the SDG&E AMI budget is approximately half that of PG&E's.[1]

B. Project and Risk Management Contract Focus Areas:

- The final management organizational structure in the contract needs to be conducive to discovering and managing new risks.
- The final contract should provide assurance that all risks are properly being identified and, if appropriate, forecasted.
- Where cost effective, the final Prime Services contract should give consideration to including ordinal ranking of the high level risks plus development of an ongoing overall project risk score.

II. DISCUSSION

A. Risk Allowance

SDG&E's initial proposal for its Risk Allowance was 15.0% of capital expenses, 12.7% when O&M expenses are included.[2] This resulted in a Risk Allowance of approximately $57 million.[3] SDG&E has, in fact, left this allowance sum of $57 million unchanged, while other project costs have been updated. The end result is that the current risk allowance of approximately 14.7% (12.6% when O&M expenses are included).[4] The nature of risk allowances in general is that they

[1] D.06-07-027, July 20, 2006, p. 13.

[2] "Cost Estimating Guide for Program and Project Management," U.S. Department of Energy, Office of Management, Budget and Evaluation, April 2004, pp. 111-112.

[3] Update to San Diego AMI Application, July 14, 2006, PC-11, line 5.

[4] Pat's Workpapers, (Capital Risk Contingency) (2) (Group), Worksheet *% Terms*, Cell F6.

can vary greatly in percentage depending on the nature of the project involved. For routine projects, 12.6% may seem quite high. For high risk projects, however, SDG&E's proposed risk allowance may seem quite modest. The key then, is to identify the order of magnitude of risk for the proposed project at hand. One difficulty therein is that much of SDG&E's project is as yet unspecified. This is by design, as SDG&E has stated that, in this fast developing technology environment, it wants to keep its options open. The lack of project specification is, in fact, a justification for SDG&E's generous risk allowance, compared to a more conservative level (e.g., PG&E's proposal of 7.4% contingency allowance). The unknown is a source of risk – and it is to SDG&E's advantage to wait, within reason, for more information on some issues. For the sake of contrast, consider the time when the project is 100% complete – both the unknowns and the risks are fully eliminated.

The Department of Energy (DOE) has published recommended risk allowance ranges based on, among other things, the extent to which a project has advanced. The 15% risk allowance that SDG&E has recommended falls squarely between DOE's Class 2 and Class 3 estimates. Class 2 is a project that has progressed further than Class 3 and is described as a project where 30% to 70% of the engineering is complete (and the maximum risk allowance is set at 15%). Amongst things that are complete for this classification are final plans and diagrams, and detailed line item costs (for thousands of items). SDG&E may not be this far along since many of the key technical vendors have yet to be selected. For Class 3, only 10% to 40% of the engineering is expected to be completed. This might better match SDG&E's current level of project completion. The associated risk allowance for Class 3 is up to 30%. Given that SDG&E will place a fair amount of risk control features in their proposed contracts, it should be able to approach the lower end of the risk allowance range for this Class.

The Association for the Advancement of Cost Engineering also looks at the effects of new versus fully tested and used technology on the appropriate level of risk

allowance. Their allowance range is 5 to 20% for the second most conservative status (modifications to commercial technology). The next class, prototyped new technology has a recommended allowance of 20 to 35%. So on this one scale (which is *not* meant to be an overall scale), 15% would put SDG&E at the aggressive end of "modifications to existing technology." Therefore, whether considering project completeness or the type of technology being employed, a 15% risk allowance seems reasonable – but this is for the project as stated. There are positives about delaying their technological choices, as SDG&E has stated, but there are negatives to this approach too. For instance, it is more difficult to present a guaranteed winning scenario (with benefits exceeding costs) if the scenario itself remains largely unfinalized. That is because the contingency allowance must be raised both for the more cutting edge technologies that SDG&E is considering and for delaying the finalization of the project design. SDG&E could lower the project risk by choosing less cutting edge technology. While this sounds like a setback, SDG&E could meet all its functionality requirements with more conservative technology.

DRA testimony provided by Steve Hadden of Plexus Research points to different technology choices and greater controls being placed on acceptance testing and warranties, all of which could lead to lowering of the actual risk expenditures and the needed risk allowance. DRA, however, has not reflected these measures by proposing the use of a reduced risk allowance for cost benefit analysis. While they may result in less expenditure out of the risk contingency allowance, it is uncertain by how much.

DRA's overall recommendation is that the SDG&E application not be approved (due to costs exceeding benefit). If, however, the Commission does give its approval, ratepayers should not have to be 100% financially responsible for the risk allowance for a proposal in which SDG&E is voluntarily choosing a higher risk path. Both the leaning towards using cutting edge technology and the move to submit an application early in the specification process are within SDG&E's control.

PG&E chose a more conservative path coupled with a correspondingly conservative 7.4% risk allowance. This should be the cutoff for the SDG&E contingency allowance as well – beyond which, shareholders pick up 10% of the costs until the full 14.7% ($57 million) of the contingency allowance is expended (in what DRA will call for convenience, the approximate "second half of the contingency allowance"). Precedents can be found for the 90 / 10 split in the recent PG&E AMI proceeding, which is in turn based on the Contra Costa 8 settlement.[5] To further make this DRA proposal similar to the recently approved PG&E AMI proposal, DRA proposes expanding of the 90 / 10 cost sharing band until it reaches half the size ($50 million) of the PG&E approved total of $100 million. This half scale is chosen since the proposed budget is approximately half that of PG&E's. As the SDG&E project totals are currently proposed, approximately $23.5 million is subject to the DRA proposed 90 / 10 split for the second half of the contingency allowance. It would take an additional approximate $26.5 million of cost sharing to make a $50 million dollar band of cost sharing. At the end of this band, the top shareholder responsibility would be exactly $5 million (10%). Beyond this, DRA proposes a reasonableness review.

Recommendations:

- That SDG&E's risk allowance beyond the 7.4% level (of approved project costs) be subject to a 90 / 10 split, with shareholders picking up 10% of the contingency expenses and ratepayers 90% at this point. 7.4% is the Commission approved PG&E risk allowance.

- That the 90 / 10 cost sharing band between ratepayers and shareholders extend for a total of exactly $50 million dollars, creating a $5 million dollar (10%) responsibility for shareholders. This cost sharing band would extend from what DRA has labeled the second half of the

[5] D.06-07-027, July 20, 2006, p. 13.

contingency allowance (that is, overrun costs beyond 7.4%) to an approximate additional $26.5 million beyond the SDG&E proposed contingency allowance.

- Excess expenditures beyond the $50 million dollar cost sharing band should trigger an automatic reasonableness review.

Even in the event that the Commission adopts the SDG&E proposal as proposed, DRA is not resigned that the money will have to be spent. On the contrary, DRA believes that the best method of containing actual risk related expenses is not through setting an allowance but through effective Project and Risk Management, as described below.

B. Project Management

SDG&E has not finalized its choice of project manager. [redacted] Therefore, DRA will not at this time contest SDG&E's as yet unfinalized project management proposals. However, the final

[redacted]

[8] Ibid. p. 1.

contract that SDG&E signs should assure that the risk management element of project management is properly specified. Specifically, the following issues should be addressed in the contract:

- How the risk management function is structured organizationally within the project management process.
- How risks will be anticipated and identified.
- What metrics will be used in evaluating and reporting risks to SDG&E.

These areas are discussed below.

1. Risk Management and Organizational Structure

Risk management can be structured and managed as a fully integrated part of project management or it can be given a separate office and some degree of autonomy. [redacted] In a 2006 publication on managing high risk projects, it was recommended that a Risk Management Office be created to serve as more than a coordinating and

[redacted]

dispatch house – it would house its own staff of risk experts.[11] Whether it is an office or a single person, having a contact point in the area of risk helps keep the client more informed.

[redacted] Thus, a focal point in negotiating the final contract is to pay careful attention should be given to how the risk management function fits into the overall project management and what level of independence that function should have relative to other project management functions.

2. Identification and Anticipation of Risk

Early and thorough identification of all the known risks associated with a project is one of the most important aspects to successfully controlling those risks. After all, risks cannot be controlled (at least not in advance) if they are not identified.

Properly done, those working on identifying risks at the outset of the project will compile a highly inclusive list: from field workers, to program and senior management, contracted and in-house risk management and experts. Successful methods of flushing out the risk issues range from free form "brain storming" sessions to rigorous review of all relevant documents: all planning documents, from the Statement of Work to performance specifications, milestone schedules, new regulations, environmental impact reports and related news stories need to be reviewed as they become available. Seemingly distant situations can have far reaching effects. A problem with the smallest subtask or part can also have a

[11] Managing the Unknown: A New Approach to Managing High Uncertainty and Risk in Projects, Loch, DeMeyer and Pich, John Wiley and Sons, Hoboken New Jersey, 2006, p. 23 – 24.

cascading ripple effect which grows into a much larger problem. Therefore, no situation is too distant or too small. Mitigation plans cannot be drawn up for risks that have not been identified.

[redacted] The final contracts, regardless of which firm is chosen, should provide an explicit and expansive description of the parties called upon to identify risks and the methods used and documents reviewed to identify risks. That all the knowable risks are identified cannot be assumed based merely on corporate reputation.

3. Prioritization of Risks and Overall Risk Assessment

There are a variety of methods to assess, prioritize and score risks. [redacted] This allows field representatives and senior management the opportunity to quickly grasp the situation. [redacted] This would allow senior management to better plan its course of attack.

The assessment of the risks is essential to their prioritization. Risks are evaluated both in terms of impact, probability of occurrence, and leading indicators. Ranking risks on a combined measure of these three elements is not straightforward. High impact risks need to be addressed, but not necessarily if they are very low probability.

[redacted]

[redacted]

III. CONCLUSION

In the event that SDG&E's AMI proposal is approved, DRA recommends that the risk allowance beyond the PG&E approved risk allowance of 7.4% be split, with shareholders picking up 10% of the costs. The proposed cost sharing band extends for $50 million, leaving shareholders responsible for $5 million if all of these cost overruns are expended. Expenses beyond $50 million dollar cost sharing band would be subject to a reasonableness review before ratepayers are expected to assume financial responsibility.

[redacted] DRA makes no formal recommendations, but does list three areas for SDG&E to consider regarding risk management.

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